

1. A method for providing a dynamic continual improvement educational environment for a user, the method comprising:

designing dynamic educational content for presentation to the user, wherein concepts of the educational content are graphically linked in a relational order;

5 selectively implementing the presentation of the educational content to the user, wherein the presentation is automatically adapted to a characteristic of the user; and

iteratively implementing at least a portion of the presentation to the user over an extended period of time to maintain the user's understanding of the educational content.

2. A method as recited in claim 1, wherein the characteristic is at least one of:

- (i) a learning pace of the user;
- (ii) a background of the user;
- 15 (iii) a style of learning of the user; and
- (iv) a learning progress of the user.

3. A method as recited in claim 2, wherein the step for iteratively implementing at least a portion of the presentation to the user over an extended period of time comprises a step for providing a systematic spaced review of the educational content to the user based on the user's performance.

4. A method as recited in claim 3, wherein the systematic spaced review is further based on dynamic parameters of a minimum delay and a maximum delay of the review, wherein the dynamic parameters are selectively adjustable by a designer.

5 5. A method as recited in claim 3, wherein the user's performance corresponds to at least one of (i) the user's accuracy and (ii) the user's speed in understanding the educational content.

6. A method as recited in claim 3, wherein the systematic spaced review
10 transitions the user's understanding of the educational content from the user's short-term memory to the user's long-term memory.

7. A method as recited in claim 2, wherein the step for designing dynamic educational content for presentation to the user comprises a step for allowing an instructional
15 designer to quickly, dynamically and customizably create the educational content by utilizing a design technique that automatically produces computer readable relating to the educational content.

8. A method as recited in claim 7, wherein the design technique comprises at least one of:

- (i) an object oriented technique that graphically relates components of the educational content; and
- 5 (ii) a drag-and-drop technique that graphically relates components of the educational content.

9. A method as recited in claim 2, wherein the step for designing dynamic educational content for presentation to the user comprises linking available components of
10 the educational content based on specific properties of the available components.

10. A method as recited in claim 9, wherein the step for designing dynamic educational content for presentation to the user further comprises selectively modifying properties of the available components.

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11. A method as recited in claim 9, wherein the step for linking available components of the educational content based on specific properties comprises utilizing a user interface for assembling educational activities from the available components, wherein the user interface facilitates the creation of dynamic, adaptive instruction.

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12. A method as recited in claim 2, wherein the step for designing dynamic educational content for presentation to the user comprises:

designing a collaborative activity among users; and

dynamically linking roles of the users in the collaborative activity.

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13. A method as recited in claim 2, wherein the step for designing dynamic educational content for presentation to the user comprises graphically developing a flow of activities for selective presentation to the user to teach a particular educational lesson.

10 14. A method as recited in claim 13, wherein the flow of activities depicts an order for which concepts are to be learned within the lesson.

15. A method as recited in claim 13, wherein the flow of activities comprises at least one of:

- 15 (i) a linear sequence of activities; and
(ii) an adaptive sequence of activities.

16. A method as recited in claim 13, wherein the flow of activities includes one or more stage markers that delineate meaningful stages of learning.

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17. A method as recited in claim 13, wherein the step for developing a flow of activities for selective presentation to the user comprises automatically snapping activity icons to a grid.

18. A method as recited in claim 17, wherein the step for developing a flow of activities for selective presentation to the user further comprises selectively organizing the activity icons to develop the flow of activities.

5 19. A method as recited in claim 18, wherein movement of an activity icon within the flow of activities includes maintaining relationships with other activities branching the activity icon that is being moved.

20. A method as recited in claim 13, wherein the flow of activities includes a
10 systematic spaced review of the educational lesson.

21. A method as recited in claim 2, wherein the step for designing dynamic educational content for presentation to the user includes designing an environment that includes a look and feel that is customized to a particular audience.

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22. A method as recited in claim 2, wherein the step for designing dynamic educational content for presentation to the user comprises at least one of:

selectively cutting an audio file into smaller files that are named and preserved;

5 modifying a start position of a selected audio file;

modifying an end position of a selected audio file;

graphically associating educational concept types with relationship types and properties;

10 graphically identifying potential presentation problems corresponding to the educational content;

automatically adding new educational content from outside resources;

selectively tagging educational portions of a particular lesson to illustrate to the user different contextual uses of the educational portions; and

utilizing a repository of media for designing the educational content.

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23. A method as recited in claim 2, wherein the step for designing dynamic educational content comprises automatically analyzing data to identify relationships between components of the educational content.

24. A method as recited in claim 2, wherein the step for designing dynamic educational content for presentation to the user comprises:

executing automated tests on components to ensure that the components function as designed; and

5 diagnosing any errors in the components.

25. A method as recited in claim 2, wherein the step for designing dynamic educational content for presentation to the user does not require that the designing be performed at the code level by a computer programmer.

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26. A method as recited in claim 2, wherein the step for selectively implementing the presentation of the educational content to the user comprises detecting any potential problems with the implementation for repair.

15 27. A method as recited in claim 2, wherein the step for selectively implementing the presentation of the educational content to the user comprises:

automatically identifying the current activity presented to the user;

keeping track of the learning progress of the user; and

automatically determining which activity to present next to the user.

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28. A method as recited in claim 2, wherein the step for selectively implementing the presentation of the educational content to the user comprises automatically evaluating activity branching conditions upon completion of an activity for branches emanating from the completed activity.

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29. A method as recited in claim 2, wherein the step for selectively implementing the presentation of the educational content to the user comprises:

automatically monitoring the educational progress of the user;

if an educational lesson is not understood by the user, performing at least one

10 of:

(i) selectively repeating at least a portion of an adaptive path related to the educational lesson; and

(ii) presenting a related activity to assist the user in understanding the educational lesson; and

15 if the educational lesson is understood by the user, following another adaptive path that relates to a subsequent lesson.

30. A method as recited in claim 2, wherein the step for selectively implementing the presentation of the educational content to the user comprises automatically providing
20 positive feedback to the user as aspects of the educational content are learned.

31. A method as recited in claim 2, further comprising tracking the progress of the user and generating a report relating to the user's progress.

32. A method as recited in claim 2, further comprising monitoring implementation fidelity to perform at least one of:

- (i) ensuring that the implementation of the presentation is performed as intended by the designer of the dynamic educational content and that the results of the presentation are reliable;
- (ii) measuring the degree to which teachers, tutors and students implement the presentation as designed and the degree to which learners, the tutors and administrators who interact with and contribute to any learning experience are encouraged to comply to system-determined guidelines; and
- (iii) automatically reporting results of the implementation fidelity.

33. A method as recited in claim 2, further comprising evaluating the learning of the educational content.

34. A method as recited in claim 33, wherein the step for selectively implementing the presentation comprises modifying the frequency for presenting the educational content based on the learning of the educational content.

35. A method as recited in claim 33, wherein the step for evaluating the learning of the educational content by the user includes automatically conducting experiments on the user to identify an optimal instructional setting for the user.

36. A method as recited in claim 33, wherein the step for evaluating the learning of the educational content includes automatically analyzing experimental data obtained.

37. A method as recited in claim 2, wherein the relational order is an hierarchical
5 order.

38. A method as recited in claim 2, further comprising a step for tracking information corresponding to the user.

10 39. A method as recited in claim 38, wherein the step for tracking information includes a step for allowing a designer to determine the type of information that is to be tracked.

40. A method as recited in claim 38, wherein the information tracked includes at least one of:

- (i) a period of time;
- (ii) a number of questions:
- 5 (iii) a number of answers;
- (iv) a number of times the user's voice was recorded;
- (v) information accessed;
- (vi) a number of user interactions;
- (vii) user interactions;
- 10 (viii) audio recording of the user;
- (ix) text from the user;
- (x) a conversation between multiple users;
- (xi) a conversation between a computer device and the user;
- (xii) a response to content presented;
- 15 (xiii) graphical data created by the user; and
- (xiv) any input received from the user.

41. A method as recited in claim 2, wherein at least a portion of the instruction of the dynamic educational content is designed using at least one of:

(i) component modules, wherein the component modules are reusable for designing other dynamic educational content, thereby causing a process of designing dynamic educational content for presentation to be efficient; and

(ii) dynamic activities, wherein the dynamic activities are reusable for designing other dynamic educational content, thereby causing a process of designing dynamic educational content for presentation to be efficient.

42. A method as recited in claim 2, wherein the step for designing dynamic educational content includes a step for allowing at least a portion of the content to be selectively supported by any of a number of output layout formats.

43. A method as recited in claim 2, further comprising a step for selectively and instantly changing a look and feel of the presentation.

44. A method as recited in claim 2, further comprising a step for grouping experimental data to determine information relating to one or more groups to which the user belongs.

45. A method as recited in claim 2, wherein the step for implementing the presentation includes implementing the at least a portion of the presentation based on the user's similarity to other users for which optimum settings have been established.

5 46. A method as recited in claim 2, wherein the step for implementing the presentation includes a step for conducting experiments using an experimental unit that is at least one of:

- (i) a particular concept;
- (ii) a particular learner type; and
- 10 (iii) a particular learner.

47. A method as recited in claim 2, further comprising a step for automatically generating a report relating to at least one of:

- (i) the presentation; and
- 15 (ii) the user's performance.

48. A method as recited in claim 2, wherein the step for implementing the presentation includes selectively prioritizing aspects of the presentation, wherein the aspects are at least one of:

- 20 (i) activities;
- (ii) lessons; and
- (iii) tasks.

49. A method as recited in claim 2, further comprising a step for selectively displaying the user's progress.

50. A dynamic continual improvement educational system comprising:
a computer device having an output device; and
dynamic educational content designed for presentation to a user from the
output device, wherein the educational content includes structural components that
are graphically linked in a relational order, and wherein a presentation of educational
concepts represented by the structural components is automatically adapted to a
characteristic of the user and is iteratively presented to the user over an extended
period of time to maintain the user's understanding of the educational content.

51. A system as recited in claim 50, wherein the characteristic is at least one of:

- (i) a learning pace of the user;
- (ii) a background of the user;
- (iii) a style of learning of the user; and
- (iv) a learning progress of the user.

52. A system as recited in claim 51, further comprising a graphical user interface
of the computer device that is configured for use in assembling activities from the structural
components, wherein the interface facilitates the creation of dynamic, adaptive instruction.

53. A system as recited in claim 51, further comprising:

a second computer device having a graphical user interface configured to graphically design a flow of the structural components for presentation to the user; and

5 a communications mechanism coupling the second computer device to the computer device and configured to enable an exchange of information between the second computer device and the computer device.

54. A system as recited in claim 53, wherein the communications mechanism is a
10 network.

55. A system as recited in claim 54, wherein the network is the internet.

56. A system as recited in claim 53, wherein the graphical user interface is
15 configured to enable an instructional designer to quickly, dynamically and customizably create the educational content by utilizing a design technique that automatically provides computer readable instruction relating to the educational content.

57. A system as recited in claim 53, wherein the graphical user interface includes
20 a grid on which a flow of activities is created by automatically snapping activity icons to the grid and providing a relationship between the activity icons.

58. A continual improvement educational process comprising:

a development module for designing dynamic educational content for presentation to a user, wherein concepts of the educational content are graphically linked in a relational order;

5 an implementation module associated with the development module for selectively implementing the presentation of the educational content to the user, wherein the presentation is automatically adapted to a characteristic of the user, and for iteratively implementing at least a portion of the presentation to the user over an extended period of time to maintain the user's understanding of the educational
10 content; and

an analysis module associated with the implementation module for determining the learning pace of the user and the user's understanding of the educational content.

15 59. A continual improvement educational process as recited in claim 58, wherein the characteristic is at least one of:

- (i) a learning pace of the user;
- (ii) a background of the user;
- (iii) a style of learning of the user; and
- 20 (iv) a learning progress of the user.

60. A continual improvement educational process as recited in claim 59, further comprising an implementation fidelity module associated with the implementation module for:

5 ensuring genuine fidelity of the presentation of the educational content; and
 measuring and encouraging fidelity to system-determined guidelines for learners, tutors, and administrators who interact with and contribute to a learning experience.

61. A computer program product for implementing within a computer system a method for providing a dynamic continual improvement educational environment, the computer program product comprising:

a computer readable medium for providing computer program code means
5 utilized to implement the method, wherein the computer program code means is comprised of executable code for implementing the steps for:

receiving input from an educational content designer to design
dynamic educational content for presentation to a user, wherein concepts of
the educational content are graphically linked in a relational order;

10 selectively implementing the presentation of the educational content on one or more output devices to the user, wherein the presentation is automatically adapted to a characteristic of the user; and

iteratively implementing at least a portion of the presentation to the
user over an extended period of time to maintain the user's understanding of
15 the educational content.

62. A computer program product as recited in claim 61, wherein the characteristic is at least one of:

- (i) a learning pace of the user;
- 20 (ii) a background of the user;
- (iii) a style of learning of the user; and
- (iv) a learning progress of the user.

63. A computer program product as recited in claim 62, wherein the step for iteratively implementing at least a portion of the presentation to the user over an extended period of time comprises a step for automatically providing a systematic spaced review of the educational content to the user based on the user's performance, including the user's
5 accuracy and speed in understanding the educational content.

64. A computer program product as recited in claim 62, wherein the step for receiving input from a educational content designer to dynamically design dynamic educational content for presentation to the user comprises a step for receiving input from an
10 instructional designer to quickly, dynamically and customizably create the educational content and automatically providing computer code relating to the educational content.

65. A computer program product as recited in claim 62, further comprising computer program code means comprised of executable code for implementing a step for
15 linking available components of the educational content based on specific properties of the available components.

66. A computer program product as recited in claim 65, wherein the step for linking available components of the educational content based on specific properties
20 comprises providing a graphical user interface for assembling educational activities from the available components, wherein the graphical user interface facilitates the creation of dynamic, adaptive instruction.

67. A computer program product as recited in claim 62, further comprising computer program code means comprised of executable code for implementing a step for graphically providing and associating a flow of activities for selective presentation to the user to teach a particular educational lesson.

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68. A computer program product as recited in claim 67, wherein the step for graphically providing and associating a flow of activities for selective presentation to the user comprises automatically snapping activity icons to a grid.

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69. A computer program product as recited in claim 68, further comprising computer program code means comprised of executable code for implementing a step for, upon receiving input to move an activity icon within the flow of activities, automatically and graphically maintaining relationships with other activities branching the activity icon that is moved.

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70. A computer program product as recited in claim 62, further comprising computer program code means comprised of executable code for implementing steps for:

executing automated tests on components to ensure that the components function as designed; and

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diagnose any errors in the components.